

Commencement Address  
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Dr. Holbrook, Trustees of The Ohio State University, distinguished guests, degree recipients, families and friends, thank you for inviting me to be with you today and for the honor of presenting the commencement address.

This is a wonderful occasion and we are all thrilled to share it with you, the graduating class.

Commencement is a milestone in your lives, and milestones mark personal and community history in important ways.

Today, more than 1,900 students will be awarded degrees across a range of disciplines. More than half of those are graduate degrees. There is work, sacrifice, and perseverance behind these numbers. Each of you knows your own personal story. None of us can know more than a few of those stories in detail. Yet we can congratulate you and your families for the choices and sacrifices you made along the way, and the efforts you expended to reach this milestone.

Whatever may follow, you deserve your day in the sun – at least metaphorically speaking – and all of us on this dais heartily congratulate you.

From a practical standpoint, pursuing a degree at OSU was a wise move. Never in history has the connection between formal education and economic success been so marked. Today's global economy may appear to be dominated by oil; in fact, it is much more heavily weighted to intangible, knowledge-driven value. More than 70% of the aggregate value of the New York Stock Exchange companies derives from intangible assets, patents, know-how, "good will", and other products of the creative mind. The well-educated increasingly hold the economic high ground. After all, Google was founded by graduate students with fairly advanced math skills.

And the future is tilting more and more to a knowledge economy. Today, there is a backlog of one million patent applications waiting to be processed at the US Patent office. Even allowing for add-ons, invalid, or insignificant filings, that is a tidal wave of future innovation ready to break on the world economy. And we see similar figures at the European, Japanese, Chinese and other world patent offices.

Given my connection with Chemical Abstracts, you may be expecting a talk about science, technology and innovation. Or, worse yet, a chemistry lecture!

Or perhaps some of you are calculating in your minds how many credit hours you would have needed to graduate in the spring and hear Senator McCain's address instead of mine!

Don't be too disappointed – I'm sure you'll have many opportunities to hear from Senator McCain in the future. And as for a chemistry lecture, believe it or not . . . it has happened. The noted legal scholar Judith Resnik prepared for her Bryn Mawr commencement address by reviewing a thousand published speeches. She reported that the topics were astonishingly varied, and included anything from Chemistry to "ballooning".

Actually, ballooning sounds really interesting.

But, what I **would** like to talk about is the importance of milestones, and history in general, and why they matter so much even in our technology-intensive 21<sup>st</sup> century world.

It is probably fair to say that we Americans are not as attuned to history as other cultures are. We like to "go from where we are" to build a better future. It is a business truism that two of the three most powerful words in Marketing are "new" and "improved". (The third of course is "free"). In some ways, this "go from where we are" attitude is one of our finest traits. But for most of us and much of the world, history is not easily denied.

There is a bit of history and context for my visit today. In a sense, I am here because of something that happened 100 years ago, the founding of CAS and its subsequent move to the Ohio State Campus. That is our milestone, and it is intertwined with your university. Let me tell that story briefly.

In 1907, a chemist at the National Bureau of Standards began compiling abstracts of scientific journal articles and patents to better inform American scientists. A century ago, one major concern of US scientists was to be taken seriously by the Europeans who then dominated the world of research. Today, history repeats, and we are again concerned about scientific leadership – this time because of challenges from China and India. (And perhaps we should be concerned. One prediction suggests that by 2020, if present trends continue, more than 80% of all practicing scientists will be working in Asia.)

**BACK TO OUR STORY...** Two years after the founding of Chemical Abstracts, its editor was invited to join The Ohio State University chemistry faculty. He moved himself, and the business, to Columbus. By the 1950's the fourth floor of the McPherson building was occupied by CAS editors. In 1956, the American Chemical Society and the University cooperated in constructing a new building, now called Watts Hall, just to house the CAS offices. In 1962, we outgrew even this hospitality of OSU and finally purchased the 54-acre campus we occupy today, just down the street from this arena.

At CAS, our Columbus roots and our relationship with OSU are very much a part of who we are, how we think, and how we operate. For fifty years, OSU provided a home to our publishing organization, and we are very grateful.

That is our history and some of our milestones.

Let's remember though, that we live in a world increasingly impacted by the milestones and histories of other people.

For instance, are we amazed at the growth and muscular economic development of China, which is no longer only a source of cheap labor but truly an emerging economic superpower? How could we be surprised if we know history well? It has been estimated that until the last few hundred years, China and India together typically accounted for roughly 50% of the world's economic output, now called gross domestic product. Today, they account for around 6%.

Will they return to the historical average and continue to grow in economic importance? And if they do, what will it mean for our economy and our future?

After all, China was for centuries the foremost scientific civilization on earth. Many scholars now believe that Chinese fleets circumnavigated the globe in the early fifteenth century. A member of the Chinese Academy of Sciences told an admiring journalist from New York that things were going better in China now, "given that we have had a difficult last 500 years."

Talk about long term perspectives...

History can strongly influence the thinking of people around the world with whom we do business and conduct diplomacy.

I have a personal perspective in this regard that I would like to relate.

My first full time job was in Iran, in its capital Teheran, in the final years of the regime of the king, or Shah of Iran. That was thirty two years ago, in 1974.

In the 1970's, we in the West saw the Shah as an unshakeable monarch and Iran as the major, and stable, regional power.

My most striking memory of living in Teheran was of seeing assemblies of Iranian men walking down the center of Teheran streets, shirtless and scourging themselves bloody. This despite Iran's secular and modern image. What I was seeing was one of the early signs of what is now being called the Shia revival, which is manifesting itself across the Middle East.

As I said, this Iran that I experienced 30-plus years ago is now very much in the news, in fact almost nightly. The topic is Iran's nuclear ambitions and the West's attempts to rein them in. It seems that hardly a day can go by without a headline or TV news coverage of Iran's nuclear power initiative.

A week or so ago, Iran's president, who by the way has a PhD, was interviewed by Mike Wallace of *60 Minutes*. When the topic of nuclear proliferation was raised, the president quickly reminded Wallace that the West was willing to sell nuclear technology to Iran 30 years ago. If it was okay then, he asked, why isn't it okay now?

At that moment, a chill went up my spine. I knew something of this history. Because thirty years ago, I worked for a law firm that represented the Shah's Atomic Energy Organization, and I was assigned to one of the main contract negotiations for nuclear power stations.

Back then, when the Shah was seen as a stable ally, the West was selling nuclear technology to Iran. Had the Iranian revolution been delayed a few years, those projects might have been completed and the whole issue of Iran with nuclear capabilities would be moot.

To the Iranians, being offered nuclear power technology by the Western powers--and by that I mean French and German companies --and signing those agreements thirty years ago, was a milestone. It is part of their history; they know it well. But we seem to have forgotten it.

This is not a speech about foreign policy, and I am not advocating any position. I simply think we need to be aware of relevant history. If we forget or ignore history that is so recent that it is part of one adult's lifetime, how can we deal with the meaning of the great waves of history that reach back hundreds of years?

Thinking of those marchers I saw in Teheran we might remember that the Shiite sect of Islam is inspired by the death of an Imam in 680. Thinking of Chinese scientists we might reflect that some of them look for inspiration and knowledge to ancient herbal cures that Western pharmaceutical companies are now rushing to patent. History is with us in both science and world affairs.

I began this address by congratulating you all on your studies and academic accomplishments. They are a tremendous foundation for life. You have prepared yourselves at a great University to thrive in a knowledge economy where technology and innovation are racing ahead and education is a key to future success.

I began this address by noting that today is a wonderful milestone in your lives. And that milestones flow together to form personal and community histories.

I would like to close by reminding us all that we, this great university, and this community are sailing on vast seas comprising the histories and milestones of many people and many nations. And that we need to study those histories and learn those seas if we are going to reach our hoped for destinations.

In reaching today, you have shown yourselves willing to work, make sacrifices and persevere. We congratulate you on your achievements and thank you in advance for bringing those same qualities to the challenges that lie ahead.

Congratulations again on your achievements, and thank you very much.